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Original article

Integration of Social and Behavioral Sciences (SBS) in Undergraduate Libyan Medical Education Programs

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Abstract
Human health is influenced by multiple interacting biological, psychological, sociocultural, economic, and behavioral factors. Research in behavioral and social sciences informs physicians' approaches to prevention, diagnosis, and patient care. Competent physicians, therefore, require knowledge of society and human behavior to develop essential communication skills, professional conduct, self-awareness, ethical reasoning, and cultural understanding. Consequently, these Social and Behavioral sciences are integral to medical training. This cross-sectional study examines the current state of Social and Behavioral Sciences integration in Libyan medical education programs through a survey of 105 faculty members, curriculum developers, and administrators. Findings reveal strong recognition of SBS importance (84.6% rated it "very important"), yet inconsistencies in curriculum implementation, with 27.9% reporting no formal SBS inclusion. Teaching methods remain lecture-dominated (77.9%), and key challenges include insufficient faculty expertise (59.6%) and curriculum time constraints (40.4%). The study recommended the early curricular integration, faculty development, and enhanced experiential learning.
Keywords. *Social and Behavioral Sciences, Undergraduate, Medical Education.*

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Introduction

Integrating Social and Behavioral Sciences (SBS) into undergraduate medical education is increasingly recognized as essential for training physicians who can address the complex psychosocial, cultural, and behavioral determinants of health [1]. SBS encompasses medical sociology, health psychology, communication skills, and medical ethics, which equip future doctors with the competencies needed to deliver patient-centered, equitable, and effective care [2]. Despite growing evidence supporting its importance, the extent and methods of SBS integration vary widely across medical curricula, often facing challenges such as limited curricular time, insufficient faculty expertise, and a traditional emphasis on biomedical sciences [3].

The importance of SBS in medical education is well-documented, with studies demonstrating that physicians trained in these disciplines exhibit improved patient communication, greater cultural sensitivity, and enhanced ability to address social determinants of health [4]. The Association of American Medical Colleges (AAMC) and the World Health Organization (WHO) have long advocated for SBS integration, emphasizing its role in reducing health disparities and improving clinical outcomes [5][6]. Effective teaching methods include case-based learning, standardized patient encounters, and community-based experiences, which bridge theory and practice [7]. However, challenges persist, including curricular overcrowding, faculty resistance, and a lack of standardized assessment tools [8]. In resource-limited settings, such as Libya, where medical education systems face infrastructural and political disruptions, the integration of SBS remains inconsistent, often relegated to fragmented modules rather than a longitudinal, competency-based approach [9]. Addressing these barriers requires institutional commitment, faculty training, and alignment with global best practices to ensure future physicians are equipped to meet the holistic needs of their patients. This study examines the role of SBS in undergraduate Libyan medical programs, explores best practices for its integration, identifies key challenges, and evaluates its current implementation in Libyan medical programs, where structural and resource constraints may further complicate effective adoption.

Methods

This study employed a cross-sectional survey design to investigate the integration of Social and Behavioral Sciences in undergraduate medical programs across Libya. Data were collected using a structured Google Form questionnaire, distributed via email and social media platforms to faculty members, curriculum developers, and administrative leaders

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from multiple medical faculties in Libya. The sampling strategy aimed to capture diverse institutional perspectives, with participation being voluntary and anonymous to ensure confidentiality.

Study Population and Sampling

The target population included medical faculty (lecturers, professors), curriculum developers, and administrative staff involved in medical education across Libyan institutions. A total of 105 responses were received, with a high consent rate (98.1%, n=102), reflecting robust engagement. The majority of respondents were faculty members (78.1%, n=82), followed by curriculum developers (17.1%, n=18), aligning with the study's focus on curriculum implementation and teaching practices. Ethical compliance was maintained through anonymized data collection, voluntary participation, and informed consent protocols. Participants received a mandatory disclosure statement outlining data protection measures, with all responses stored on password-protected servers.

Data Collection Tool

The questionnaire was designed to gather both quantitative and qualitative data through closed-ended and open-ended questions. It covered key domains: Awareness and perceived importance of SBS in medical training. Curriculum integration (e.g., presence of SBS courses, teaching years, integration methods). Teaching approaches and assessment strategies. Challenges and suggestions for improvement. Closed-ended questions used multiple-choice and Likert-scale formats, while open-ended sections allowed respondents to elaborate on barriers and recommendations. This mixed-methods approach enabled triangulation of findings, enhancing validity.

Data Analysis

The Google Form link was distributed through institutional networks and professional groups, ensuring broad reach. Reminders were sent to maximize response rates. To comply with ethical standards, the survey began with a consent form explaining the study's purpose and anonymity protocols, addressing concerns about personal data protection. Quantitative data were analyzed descriptively, with frequencies and percentages calculated for key variables (e.g., awareness levels, integration methods). Qualitative responses were coded thematically to identify recurring challenges and improvement strategies. For example, open-ended suggestions highlighted calls for early SBS integration and faculty training workshops, which were synthesized into actionable recommendations.

Results

The questionnaire received 105 responses, with 98.1% (n=102) consenting to participate, indicating strong engagement from the target population. The majority of respondents identified as faculty members (78.1%, n=82), followed by curriculum developers (17.1%, n=18), suggesting the findings primarily reflect the perspectives of teaching staff rather than administrative or leadership roles. The responses of participants on the questionnaire sections were as follows:

Awareness and Importance of SBS

As shown in Table 1, a significant majority (82.9%, n = 87) reported familiarity with the term "social and behavioral sciences" (SBS) in medical education, underscoring its recognition within the field. Furthermore, 84.8% (n=89) rated SBS as "very important" for medical training.

Table 1: The awareness and importance of SBS among the participants

Awareness	**Count**	**%**
Yes	87	82.9%
No	18	17.1%
Importance	Count	%
Very important	89	84.8%
Moderately/Slightly/Not important	16	15.2%

Integration of SBS in the Curriculum

Despite widespread acknowledgment of its importance, only 55.2% (n=58) confirmed the inclusion of SBS-specific courses, while 27.6% (n=29) were unsure, highlighting inconsistencies in curriculum design. Courses were most commonly taught in the 4th year (62.3%, n=43) and 5th year (26.1%, n=18), as shown in Table 2, potentially limiting early

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exposure to foundational concepts. Integration methods included case-based learning (41%, n=43) and community-based programs (44.8%, n=47), though standalone courses (29.5%, n=31) suggest fragmented implementation. These findings emphasize the need for systematic integration across all training stages.

Table 2: The integration of SBS in which study year and the methods of integration into medical programs

Study Year of SBS Courses	Count	%
4th year	43	62.3%
5th year	18	26.1%
Internship	13	18.8%
Integration Methods	Count	%
Case-based learning	43	41%
Community-based programs	47	44.8%
Standalone courses	31	29.5%

Topics Covered

As shown in figure 1, key SBS topics included patient-doctor communication (66.7%, n=70), ethics/professionalism (63.8%, n=67), and health promotion (61%, n=64), reflecting alignment with core competencies for medical practice. However, less emphasis was placed on social determinants of health (36.2%, n=38) and cultural competence (30.5%, n=32), areas critical for addressing health disparities.

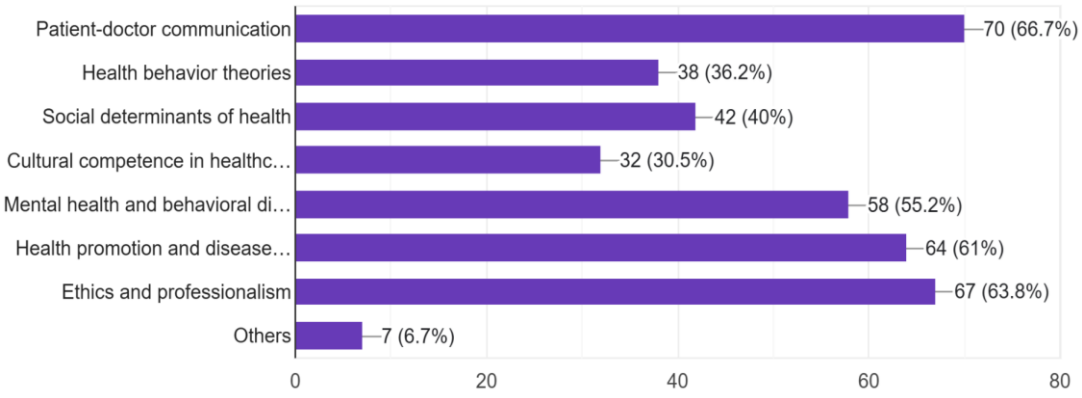

Figure 1: The topics of SBS that are covered by medical programs

Teaching and Assessment Methods

Table 3 shows that teaching relied heavily on lectures (78.1%, n = 82), with limited use of interactive methods, such as role-playing (15.2%, n = 16). Assessment primarily involved written exams (44.8%, n=47) and presentations (40%, n=42), though 13.3% (n=14) reported no formal evaluation, raising concerns about accountability and skill mastery.

Table 3: Teaching and assessment methods of SBS in undergraduate Libyan education programs

Teaching Methods	Count	%
Lectures	82	78.1%
Small group discussions	44	41.9%
Case-based learning	35	33.3%
Assessment Methods	Count	%
Written exams	47	44.8%
Presentations	42	40%
Not assessed	14	13.3%

Effectiveness and Challenges

Only 61% (Very/Moderately effective) of respondents viewed the program's SBS instruction as effective, with 34.3% (Slightly/Not effective) citing barriers such as insufficient faculty expertise (60%, n=63) and curricular time constraints

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(40%, n=42), as shown in table 4. These challenges echo global reports on the under prioritization of SBS in medical education, where faculty training and institutional support often lag behind clinical disciplines.

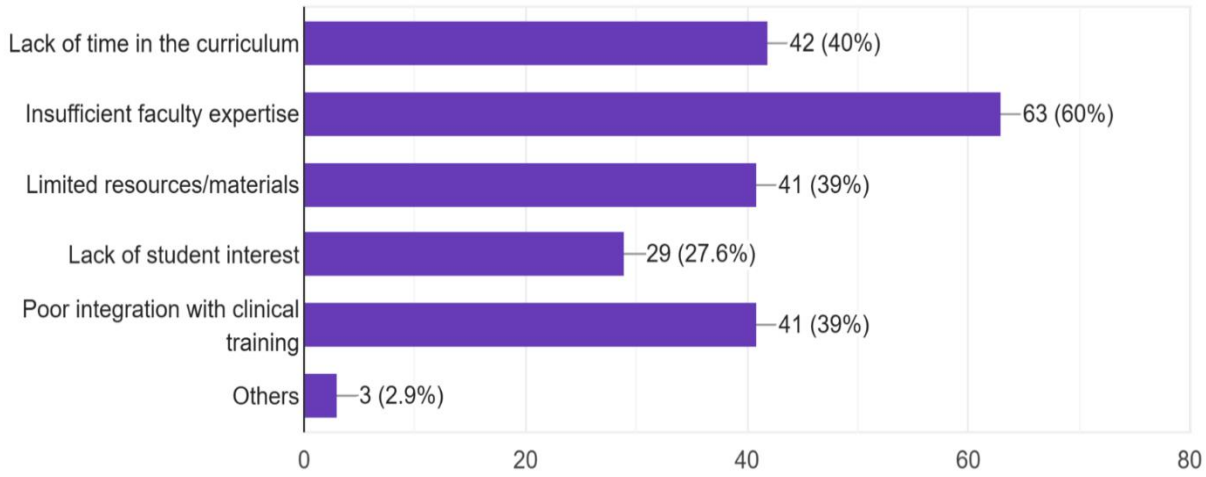

Figure 2: Barriers and challenges that faces the proper integration of SBS in undergraduate Libyan medical education

Suggestions for Improvement

Respondents advocated for early integration (e.g., starting in the 1st year), faculty workshops, and practical case studies to enhance relevance and engagement. Additional proposals included formalizing SBS as a core subject and expanding resources for qualified instructors. Open-ended feedback emphasized the urgency of addressing gaps in curriculum design and faculty understanding, particularly in regions like Libya, where standardization is lacking.

Discussion

This study of 105 respondents (98.1% consent rate) from a Libyan medical institution reveals significant insights into the integration of social and behavioral sciences (SBS). While demonstrating high awareness (82.9%) and perceived importance (84.8%) of SBS aligning with global recognition of its necessity for patient-centered care operationalization remains fragmented [6]. Only 55.2% confirmed dedicated SBS courses, with 27.6% uncertain about curricular inclusion. This implementation gap mirrors challenges in low-resource settings where institutional support lags behind policy aspirations [10]. The concentration of SBS in later training years (62.3% in Year 4; 26.1% in Year 5) delays foundational exposure, contrasting sharply with longitudinal integration models in high-income countries where SBS concepts are embedded from Year 1 [11].

Notable content disparities exist. While patient communication (66.7%) and ethics (63.8%) receive coverage, critical areas like social determinants of health (SDOH) (36.2%) and cultural competence (30.5%) are underrepresented—a concerning gap given SDOH's documented impact on 80% of health outcomes [12]. This contrasts with increasing SDOH integration in US/UK curricula through "structural competency" frameworks [13]. Pedagogically, Libyan programs rely heavily on lectures (78.1%) with minimal interactive methods (role-playing: 15.2%), while assessment depends disproportionately on written exams (44.8%), with 13.3% reporting no formal evaluation. Globally, leading institutions utilize case-based learning, standardized patient encounters, and competency-based assessments like OSCEs to ensure skill mastery [14] [15].

Effectiveness barriers reflect systemic challenges. Faculty identified insufficient expertise (60%) and time constraints (40%) as primary obstacles (X^2=40.12 and X^2=35.45, respectively), with only 61% rating SBS instruction as effective. These resonate with global reports, particularly in low- and middle-income countries (LMICs) where faculty development resources are scarce [16]. While US/UK programs address gaps through institutional faculty development initiatives (e.g., IHI certifications), LMICs often lack equivalent support structures.

The findings underscore actionable reforms. Curricular integration should begin early and span all training phases, adopting spiral designs that reinforce SBS concepts progressively. Critical content gaps in SDOH and cultural competence require urgent attention using WHO-aligned frameworks. Pedagogical shifts toward interactive methods (case-based learning, community immersion) and competency-based assessments (OSCEs, portfolios) are essential. Institutionally, faculty capacity building through digital platforms (e.g., SIVU modules) and protected development

time must be prioritized. National accreditation bodies should enforce SBS standards aligned with the World Federation for Medical Education WFME, 2023 guidelines to ensure accountability [17].

Conclusion

The Libyan case exemplifies a global paradox: widespread recognition of SBS importance coexists with implementation deficits, particularly in resource-constrained environments. Bridging this gap requires contextually adapted strategies emphasizing early integration, faculty empowerment, and pedagogical innovation. By addressing these challenges, medical education in Libya can better equip physicians to navigate complex socio-behavioral determinants of health and advance health equity.

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